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ABSTRACT

The Action Research on Change in Schools (ARCS) project was a collaborative action research study that involved two levels of research: a specific research project in each of two junior high schools in Michigan and New Hampshire, and a simultaneous study of the collaborative action research process itself as it relates to teachers' individual stages of development. Both teams involved all staff members in research activities that focused on evaluation studies of school-based scheduling issues and their effect on curriculum and instruction. Three empirical measures assessing moral judgment, ego development, and conceptual complexity were administered to all participating teachers, and a variety of documentation techniques were used to record and monitor the process of action research in each team. This executive summary presents findings from both levels of the study. First, a comparison is presented of teachers at each of the four stages of development: conventional, transitional, goal-oriented, and self-defining. Next, the collaborative action research process is described, along with teacher-perceived outcomes in the areas of school context, collegiality, teachers as action researchers, and collaborative action research. A discussion ensues of collaborative action research as it relates to staff development and school improvement. The report concludes with implications of the findings for principals and school administrators and for staff developers, teacher educators, and researchers. References are included. (TE)

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# COLLABORATIVE ACTION RESEARCH: A TWO YEAR STUDY OF TEACHERS' STAGES OF DEVELOPMENT AND SCHOOL CONTEXTS

Executive Summary

July, 1984

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## INTRODUCTION

Collaborative action research represents a renaissance as a line of inquiry within educational research. The idea of such collaborative efforts was articulated by Schaefer (1967) in The School as a Center of Inquiry, demonstrated by Corey (1953) and others in the 1940's, and applied recently by Oja (1979, 1980) and Pine (1979a, 1979b, 1979c, 1980) in a 12th Cycle Teacher Corp project, as well as several other researchers (Ward and Tikunoff 1982). The current collaborative research action study, Action Research on Change in Schools (ARCS), is the third in a series of NIE sponsored research activities on collaborative action research. Preceding NIE projects include the original Interactive Research and Development on Teaching Study (IR and DT), (Tikunoff, Ward, and Griffin, 1979); and the Interactive Research and Development on Schooling Study (IR and DS), (Griffin, Lieberman, and Jacullo-Noto, 1983). In addition to these studies a replication of the IR and DT study was conducted by Huling (1981).

In the ARCS project it was assumed that collaborative action research is characterized by several elements:

1. Research problems are mutually defined by teachers and researchers.
2. University researchers and teachers collaborate in seeking solutions to school-based problems.
3. Research findings are used and modified in solving school problems.
4. Teachers develop research competencies and researchers re-educate themselves in field based research methodologies.
5. Teachers are more able to solve their own problems and renew themselves professionally.
6. Teachers and researchers co-author reports of findings.

## UNIQUENESS OF THE ARCS PROJECT

Although previous studies have involved both teachers and university researchers in collaborative action research, the ARCS Project was unique. In this study, the characteristics of teachers according to their adult developmental stage scores were used to examine individual teacher participation and perception of issues related to the collaborative research process.

The ARCS project was unique in its focus on the individual teachers (in a school setting) and their stages of development (ego, moral, conceptual, interpersonal) as a means to gain information and insight to address two questions: (1) to what extent and in what specific ways does a collaborative research project support or influence teachers' personal and professional development? and (2) to what extent and in what specific ways does a collaborative research project support and influence teachers' ability to propose or initiate change in school practices?

In order to understand the impact of the project on individual teachers' personal and professional development, the research focused on individual teachers' stages of development. Individual teachers stages of development was used as a framework or lens for: (1) describing the teachers who participated in the project, (2) understanding teachers perspectives on the goals of the project, (3) understanding teachers perceptions of their school, (4) understanding the way teachers interact on a research team (group process), (5) understanding how teachers collaborate on a research project (what tasks they take on), and (6) understanding teachers perceptions

of the outcomes of the project.

Several design features were built into the project in order to take a close look at the impact of the project on the school. For example: (1) the research projects conducted by the teams of teachers and university researchers were directed toward addressing a problem within a particular school-site, (2) all the research project team meetings were conducted at the school-research site, (3) all the teachers participating in the research project on each team were members of the school-site staff, and (4) the researcher on each team was also a principal investigator of the study able to assess the climate of the school, observe the interface between the project and the school, and ask teachers to reflect on the impact of the project on the school at various stages of the project. In order to probe the influence of a collaborative research project on teachers perceptions of their ability to propose change in school practices, the researchers asked teachers their views on what they thought the principal would do with the findings or how they thought the principal might use the findings. The researchers also asked the teachers to consider formulating a set of recommendations in their final project report (a subject of apparent great debate among the teachers on each team...).

In addition to the framework of adult developmental stages, other elements of the design and instrumentation of this project differed from its immediate predecessors:

1. Previous studies used pre/post entrance-exit interviews, while this study used a total of five interviews generating pre-during-post data

which provided more information on teachers perceptions and more opportunities for teachers to reflect on the school, the process, the project, and themselves as researchers.

2. The ARCS study used a participant observer as opposed to a staff developer on the team. Participant observation documentation of each meeting coupled with audio tape transcripts provided the basis for indepth analysis of how teachers progressed and worked through the research process.

3. The university researcher on each team was principal investigator of the study and served in the role of researcher and technical assistant. Thus, the research process was observed first hand by the principal investigators who know both traditional and collaborative models of research.

4. All the teachers on each team (MI and NH) were from the same school, on the same staff, so they shared the same context, which made it possible to assess the different teacher's perceptions of the same school.

5. This study focused concomitantly on the collaborative action research process, the contextual variables of the school and their impact on individual teachers and the research process, as well as the interplay between individual developmental stages and contextual variables.

In the ARCS Project, university researchers collaborated with teachers from two public middle/junior high schools. One team from Michigan consisted

of five teachers from the same middle school, one university researcher, and a research assistant who documented meetings. The second team from New Hampshire consisted of four junior high teachers and one part time teacher/ administrator from the same school, a university researcher, and a graduate research assistant/documenter.

The following three empirical measures were administered to all teacher participants in order to assure representation of a variety of developmental stages on each team:

**The Defining Issues Test of Moral Judgment (Rest, 1974)**

**The Washington University Sentence Completion Test of Ego Development (Loevinger and Wessler, 1970)**

**The Paragraph Completion Test of Conceptual Complexity (Hunt, et al., 1973)**

Thus, while the teachers and researchers carried out their action research studies, a variety of data sources was used to record and monitor the process of action research in each team. These included: (1) audio recordings of all team meetings and transcripts of selected meeting tapes; (2) written documentation of all team meetings by participant observer (using Schatzman and Strauss method, 1973); (3) teacher logs; (4) pre-post questionnaires with participants, other teachers, and administrators; and (5) interviews conducted at crucial points in the research process with participants, school administrators, and other school staff members.

Over a period of two years, meeting weekly on-site in the schools, the ARCS teams identified and developed research questions that were seen to

address their school concerns most effectively. Through this process, teachers working with university researchers conducted appropriate studies and worked toward programmatic changes. Both teams involved all staff members in these research activities which focused upon evaluation studies of school-based scheduling issues and their impact on curriculum and instruction. The New Hampshire team specifically dealt with the relationship between teacher morale and job satisfaction and a number of organizational changes and practices occurring at their school, while the Michigan team included parents and students as well as staff members in examining their schools' current scheduling practices and philosophy. In essence, the ARCS project involved two levels of research: a specific research project in each school plus a meta research study of the collaborative action research process and individual teacher stages of development.

## COMPARISON OF TEACHERS AT DIFFERENT STAGES OF ADULT DEVELOPMENT

The major design feature of the ARCS project was its focus upon teachers chosen to represent different developmental stages. Each team, for example, included teachers in the four common adult stages of development: the conventional stage, the transitional stage, the goal-oriented stage, and the self-defining stage. Table 1 characterizes these stages in terms of ego development (Loevinger), moral judgment (Kohlberg, Rest) conceptual complexity (Hunt), and interpersonal sensitivity (Selman).

Table 1
COMPARISON OF STAGES OF DEVELOPMENT

| ARCS TEACHERS STAGES OF DEVELOPMENT | Stages of Development: Ego Development Loevinger | Moral Development Rest, Kohlberg | Cognitive Development Piaget | Conceptual Development Harvey, Hunt, Schroder | Interpersonal Development Selman |
|---|---|---|---|---|---|
| | Presocial | | Sensori/Motor | Unilateral Dependence | Unilateral Relations |
| | Symbiotic | Preconventional (Stages 1 & 2) | | | |
| | Impulsive | | Preoperational | | |
| | Self-Protective Transition | | Concrete Operations | Negative Independence | Bilateral Partnerships |
| CONVENTIONAL | Conformist | | | | |
| TRANSITIONAL | Self-Aware Transition | Conventional (Stages 3 & 4) | Concrete/Formal Operations | Mutual Dependence | Homogeneous Relations |
| GOAL-ORIENTED | Conscientious | | | | |
| SELF-DEFINING | Individualistic Transition | | | | |
| | Autonomous | Post-Conventional (Stages 5 & 6) | Full formal Operations | Interdependence | Pluralistic Relations |
| | Integrated | | | | |

Adapted from Oja, 1980, "Adult Development is Implicit in Staff Development." The Journal of Staff Development, Vol. 1, No. 2.

The ARCS researchers found that teachers at different developmental stages reacted differently to collaborative action research; behaved differently in action research teams; thought differently about authority and leadership; conceived of change differently; and understood the goals and outcome of research differently.

The final report documents in depth the profiles of individual teachers at different stages of adult development.

## Conventional Teacher

The one conventional teacher in the ARCS project scores at the Conformist ego stage, with a moderately high conceptual level. This conventional teacher perceived change as an external process, a simplistic way of solving problems. According to this perspective, change was viewed as a one shot episode rather than as a process over time with past, present, and future implications. Teachers who exhibit such a conventional perspective seem to be more concerned with issues of authority and control, with minimizing controversy, and with maintaining rules or implementing policies than with questioning the purposes of these rules/policies.

The conventional teacher tended to resort to arguments based on his authority, knowledge, and control, which came from his position as a part-time administrator. Consistent with his stage perspective, this teacher also viewed the role of the university researcher as director and organizer of interests in the group, who must guide the team in carrying out the research

process. Although the conventional teacher in the ARCS project left after year 1 to assume a principalship in another school district, he continued to stress the team's need for more university researcher direction in his final interview.

However, team meeting transcripts and documentation from the second year of the ARCS project, indicate that the conventional teacher's absence actually enhanced the New Hampshire team's ability for self-direction and goal achievement.

## Transitional Teachers

Three Michigan teachers and one New Hampshire teacher functioned at the transitional stage of cognitive development.

As their scores indicate, all four of these teachers, in transition between the prior Conformist ego stage and subsequent Conscientious goal-oriented stage, exhibited increased self-awareness and a beginning appreciation and understanding of multiple possibilities or alternatives in problem solving situations.

Although their feelings were expressed in vague or global terms, these transitional teachers demonstrated a growing awareness of inner emotions and an enhanced capacity for introspection. Characteristic of the self-aware stage of development, needs for group acceptance continued to supersede individual needs for some of the teachers. For example, two transitional teachers stressed that fulfilling the needs of others was their goal for this project, rather than any personal gains they might earn from participating.

However, the two remaining transitional teachers did emphasize career goals and growth which would benefit both themselves and the school as a whole. This difference among perceptions of teachers scoring at the same developmental stage was not surprising given one of the teacher's inability to assume team task responsibilities, while the other teachers demonstrated high commitment and involvement in project tasks. Perhaps this difference also reflected the movement of at least two transitional teachers toward the Goal-oriented stage.

## Goal Oriented Teachers

Two New Hampshire teachers and one Michigan teacher in the ARCS project functioned at the goal oriented developmental stage.

Each of the goal oriented teachers seemed capable of self criticism and internalizing rules. Guilt was the consequence of breaking inner rules, while exceptions or contingencies were recognized in direct relation to a growing awareness of the subtleties of individual differences. These conscientious teachers viewed behavior in terms of feelings, patterns, and motives rather than simple actions. Achievement, especially when measured by self-chosen standards, was crucial. In fact, many of the comments made by these teachers during team meetings illustrated a preoccupation with obligations, rights, traits, ideals, and achievement defined more by inner standards and less by the need for external recognition and acceptance.

Although one goal oriented teacher often felt confident and assertive

about his opinions, his extreme stability sometimes caused rigidity toward change in general. In order to solve the problems he saw as the team's goal, he tended to find and use formulas, seeking the rules or laws which governed behavior and interaction in the system. While this allowed him to work on the problems identified by the group and move the team along, it prevented him at times from looking at alternatives or subtleties in problem situations. However, this teacher initiated and completed the school history and became the spokesperson for the New Hampshire team, serving as its liaison to the school and school system administration.

For several reasons, the second goal oriented teacher manifested the stage characteristics quite differently than either of the other two teachers who shared this stage. First, she was in transition to the self-defining stage in some dimensions of her thinking. Second, she had considerably less experience in this school than the first goal oriented teacher. Third, her interpersonal orientation had not yet provided her with power. However, she initiated to a large extent the team's concentration on its research questions/design, and she used team meetings as a forum within which her concerns about teaching and work could be voiced. For this goal oriented teacher, the ARCS project was a set of resources available to help her cope with changes. She realized that the issues causing her stress in school were not going to change, so she had to change. This meant moving toward her own system of internal reinforcement. The confidence and skills that this goal oriented teacher gained from the project, plus her deeper appreciation for individual differences, the contribution of team members, and the principal's job in the school/district,

all helped her define her own self-system more clearly, especially in terms of the reality of school context issues and decision making.

Although sharing many of the same general stage characteristics, the third goal oriented teacher's personal growth and development during the ARCS project was significantly influenced by several school context issues. For example, at the beginning of the project's second year, this Michigan goal oriented teacher felt that her professionalism (self-system) was being challenged when she was mandated to participate in a specific staff development program. After this incident, analysis of team meeting documentation revealed that this conscientious teacher seemed to withdraw from the group by lowering her expectations and commitment in order to guard against further challenges to her self-system. Another important issue for this teacher was her loss of the self-defining teacher who left the Michigan team after the first year of the project. In both team meetings and her logs, this goal oriented teacher said she "...had looked to the self-defining teacher as a resource and a catalyst for her own thinking about new perspectives."

## Self-Defining Teachers

The two self-defining teachers in the ARCS project scored at the individualistic stage of ego development, and both achieved high conceptual level scores.

Although the self-defining teacher from Michigan said she left the team after the first year because her perspective was represented by others, team

meeting documentation indicated that her perspective on school, classroom, and teaching/learning issues was quite different from other team members. It was this self-defining teacher who consistently brought the student perspective to the Michigan team. In addition, she was often concerned with becoming more of her own person with autonomy and harmony and less dependent on colleagues, spouse, critics, or mentors. Analysis of this teacher's interpersonal stage revealed that she saw the group as a homogeneous community, while the New Hampshire self-defining teacher saw the team from a pluralistic perspective. The Michigan teacher, therefore, regarded loyalty to the group and interpersonal relations as based upon common ground (homogeneity of values). When her views were different from the rest of the group, she had to make a choice in order to remain totally committed to the project. Had she been able to view the group from a pluralistic perspective, she may have been able to remain on the team and find a successful compromise which would have enabled her to use and enhance her skills and her differences on the team as did the New Hampshire self-defining teacher.

The self-defining teacher on the New Hampshire team demonstrated an increased ability to tolerate paradox and contradiction along with greater conceptual complexity shown by his awareness of discrepancies between inner reality and outward appearances, between psychological and physiological responses, and between process and outcomes. This individualistic teacher defined collaborative group leadership as including multiple functions requiring more than one kind of leader for specific tasks. He saw himself, the university researcher, and other team members assuming various tasks as

different needs arose. He became very active in creating computer programs for data analysis, and pushed the team to outline and begin work on its final report. Once the ARCS project ended, this teacher continued to investigate the possibilities of further action research. Not limited by the definitions of duties, performances, or work roles dictated by the school, he has redefined his career. In this respect, the New Hampshire self-defining teacher may be viewed as entering the post-conventional system where an inter-dependent self-definition retains primary focus, and self-actualization becomes the goal.

## COLLABORATIVE ACTION RESEARCH PROCESS

Collaborative Action Research is dynamic and phenomenological in nature reflecting the applied nature of the teaching profession and its ongoing need to act, a need which cannot be delayed until research results have achieved a pre-established level of certainty. In collaborative action research continuous cultural change in the school as well as the unsynchronized intentionality of individual teachers is reflected in a tentativeness which is not characteristic of other research approaches. The conclusions reached are tentative generalizations subject to continuous revision. Collaborative action research is ongoing in conception rather than periodic or comprised of discrete entities.

"Ongoing tentativeness" becomes implementable through recursion. The data, the generalizations, and even the research questions themselves are

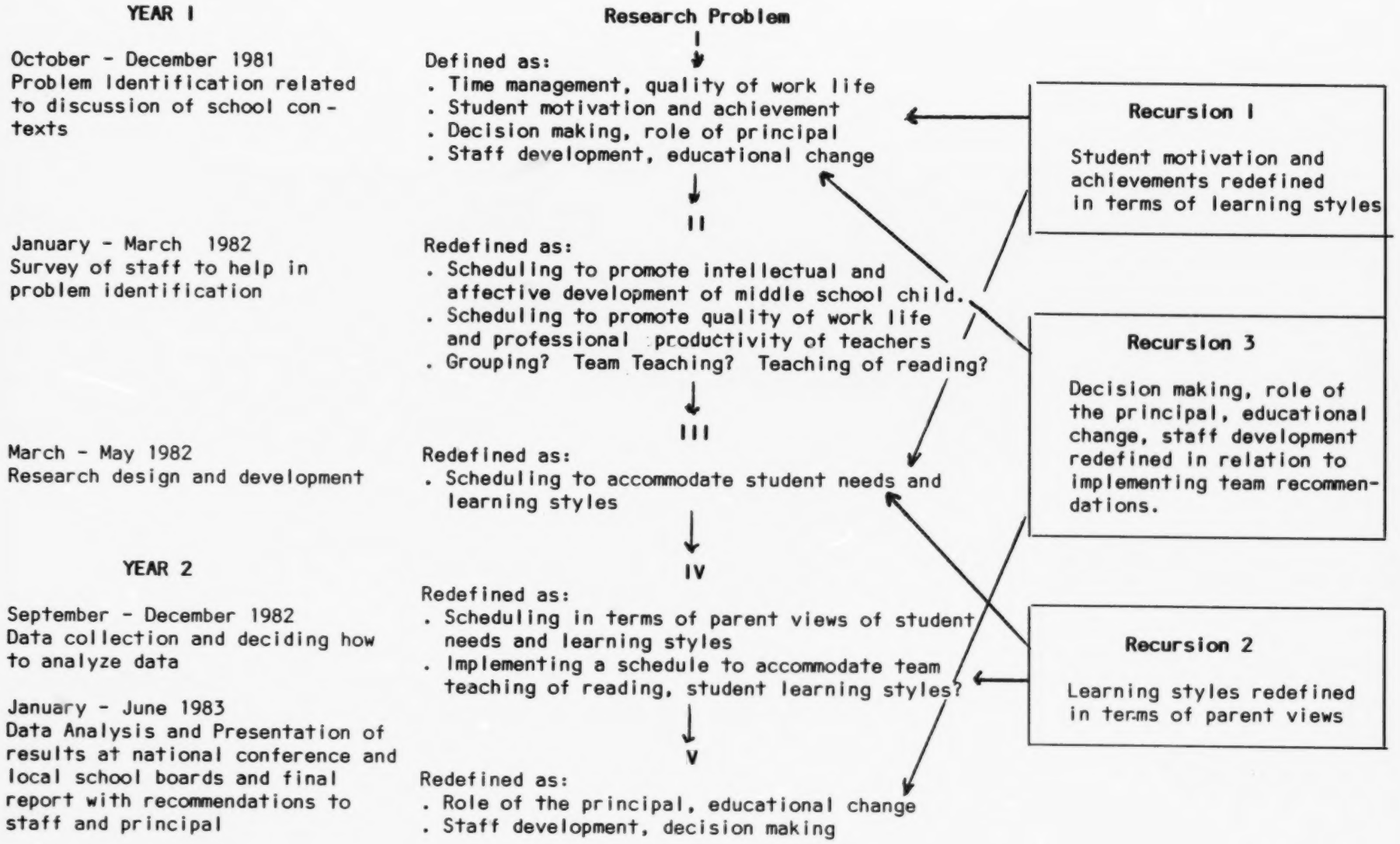
resubmitted along with whatever new empirical data have been accumulated to achieve revised albeit tentative generalizations.

Recursion as the basic action-research process of ARCS assumes there are no conclusions but rather ongoing, indeed infinite, revisions. Collaborative action research constantly calls upon its own results and/or elements for the development of new results and/or elements. Recursion was a mainstay in the conception of ongoing tentativeness built into the ARCS project.

In the collaborative action research approach of ARCS not only were the data acquired subject to revision, but the problems themselves were in a continuous state of dynamic revision. The ARCS action research model developed and redeveloped the research questions by submitting their parameters to a process of redefinition that took into consideration whatever new data and/or context had accumulated. The collaborative action research teams proceeded through different phases of research in a recursive rather than linear fashion as they conducted their research. (See Table 2)

TABLE 2

EXAMPLE OF RECURSION - PROBLEM IDENTIFICATION


YEAR 1
Research Problem
October - December 1981
Problem identification related to discussion of school contexts
Defined as:
. Time management, quality of work life
. Student motivation and achievement
. Decision making, role of principal
. Staff development, educational change
I
II
January - March 1982
Survey of staff to help in problem identification
Redefined as:
. Scheduling to promote intellectual and affective development of middle school child.
. Scheduling to promote quality of work life and professional productivity of teachers
. Grouping? Team Teaching? Teaching of reading?
III
March - May 1982
Research design and development
Redefined as:
. Scheduling to accommodate student needs and learning styles
IV
YEAR 2
September - December 1982
Data collection and deciding how to analyze data
Redefined as:
. Scheduling in terms of parent views of student needs and learning styles
. Implementing a schedule to accommodate team teaching of reading, student learning styles?
V
January - June 1983
Data Analysis and Presentation of results at national conference and local school boards and final report with recommendations to staff and principal
Redefined as:
. Role of the principal, educational change
. Staff development, decision making
Recursion 1
Student motivation and achievements redefined in terms of learning styles
Recursion 3
Decision making, role of the principal, educational change, staff development redefined in relation to implementing team recommendations.
Recursion 2
Learning styles redefined in terms of parent views

## PRODUCTS AND OUTCOMES

In the ARCS project, teachers focused on school based problems of scheduling and teacher morale. They concentrated on producing research which would be acceptable to others and would contribute to an understanding of the factors involved in teacher morale and scheduling practices in their schools. Although these goals were commonly shared by all team members, teachers at different developmental stages perceived, discussed, and achieved the goals in uniquely individual ways.

The teachers on both ARCS teams valued their group process, and perceived growth in themselves as a result of that process. Although their concerns focused on how the action research results would contribute to improved school practice and educational theory, it was their experiences on the team which all teachers said they would transfer into their own classrooms, schools, and districts. For the ARCS teachers the process of action research was its most important product holding the greatest potentiality for effecting change in the schools.

The collaborative action research process contributed to increased confidence in the teachers' ability to identify, confront, and solve classroom or school based problems. Through their participation in ARCS all teachers became more familiar with research language, methodology, and design. Their involvement also made them better consumers of educational research and stimulated some to become more skilled researchers. During the ARCS project, teachers shared their research methodologies and findings at national, regional and local conferences in addition to their own school district staff development committees, school boards, and university faculties. (See Table 3)

Table 3

**Dissemination Products of ARCS**

**Teacher Presentations**

| | Date | New Hampshire Presentations | Date | Michigan Presentations |
|---|---|---|---|---|
| During ARCS Project | May 1982 | Syracuse workshop. Two ARCS teams met to present research proposals and share ideas | May 1982 | Syracuse workshop. Two ARCS teams met to present research proposals and share ideas |
| | November 1982 | National Staff Development Conference | November 1982 | National Staff Development Conference |
| | February 1983 | Local District Staff Development Committee. Report on collaborative action research and relation to staff development credit | January 1983 | Institute for Research on Teaching, Michigan State University |
| | April 1983 | AERA symposium. Report on ARCS project and process of collaborative action research | March 1983 | Local school board. Report on results and implications of ARCS study for the school district. |
| | | | March 1983 | Western Michigan State University Forum, report on ARCS project and methodology collaborative action research |
| | April 1983 | University of New Hampshire graduate course on Stress in Educational Organizations. | April 1983 | AERA symposium. Report on ARCS project and process of collaborative action research |
| | May 1983 | University of New Hampshire faculty colloquium. | May 1983 | Presentation to chapter meeting of Phi Delta Kappa |
| | June 1983 | Lesley College Middle School Conference | | |
| | June 1983 | One team member appointed to National Middle Schools task force | September 1983 | Two team members designated as Collaborative Research authorities and appointed to staff development positions in the middle school |
| Year after ARCS Project | April 1984 | Northeastern Education Research Association Meeting (NEERO). Present results of Teacher Morale Study | June 1984 | Final Team Report accepted for paper presentation at National Middle School Conference |
| | April 1984 | One team member attended AERA and task force on middle school | | |

In the year following the ARCS project, the Michigan Team research report was accepted for a paper presentation at a natonal conference. Two of the Michigan team members were designated by their principal as "collaborative research authorities", and were appointed to staff development positions. Likewise, two New Hampshire team members attended and presented the teachers' perspective on ARCS and their team report at national conferences on educational research.

## TEACHER PERCEIVED OUTCOMES

Teachers on the team expressed a variety of different perceptions regarding the school context, collegiality with other teachers, themselves as researchers, and action research approaches to school problems. In depth analysis of the data indicated these perceptions often reflected the teachers' stages of adult development. Among the variety of perceived outcomes were the following:

### School Context

- Better understanding of the workings of the school
- Greater understanding of the problems and decisions faced by school administration
- Greater knowledge of the complexity of the hierarchy of decision making processes in the school
- Better understanding of school issues.
- More fundamental grasp of the relationship between scheduling, curriculum, and school philosophy

- Greater appreciation of the impact of the history of the school on current problems and issues.

**Collegiality**

- Creation of new patterns of communication, collegiality and sharing on the team
- Knowledge of the dynamic of collegiality and its influence on school problem solving
- Greater willingness to communicate concerns and to experiment with solutions
- Gaining support and emotional strength from team members in confronting day to day problems and issues
- Sharing and building a common body of knowledge
- Feeling more comfortable in the school and able to cope with pressures of the school day
- Greater concern for developing school-wide collegiality

**Teachers as Action Researchers**

- Choosing a school-wide review of the state of practice to develop a conceptual basis for their work
- Using internal resources in the school to examine a problem (school history, statements of philosophy, demographic data, curriculum guides...)
- Collecting information from the thinking of other teachers (through survey data and interviews) to define and address problems.

- Seeing research design as recursive rather than static
- Viewing research as less intimidating and feeling more comfortable and knowledgeable in conducting research
- Seeing themselves as professionals whose opinions were valued and respected.

**Collaborative Action Research**

- Seeing action research as an effective problem solving model which can be applied in a variety of school situations
- Valuing collaborative action research as a model of staff development
- Viewing collaborative action research as a process for refining and using teacher capabilities
- Developing a more comprehensive understanding of educational problems and their possible solutions
- Experiencing collaborative action research as a source of personal and professional renewal and intellectual stimulation

## COLLABORATIVE ACTION RESEARCH, STAFF DEVELOPMENT, AND SCHOOL IMPROVEMENT

Collaborative action research liberates teachers' creative potential, stimulates their abilities to investigate their own situations, and mobilizes human resources to solve educational problems — it is a concurrent process of research and staff development. It assumes that educational practice is the

first business of education, that there is a generic need to improve educational practice, and that the improvement of educational practice requires the confrontation of real problems in the school by conceiving alternatives and testing them out. Practice then becomes the crucible for innovation, an obtrusive measure of assumptions, speculations, and theories.

Teachers participating in collaborative action research become agents of their own change. Teachers use action research to grow personally and professionally, developing skills and competencies which empower them to solve problems and improve educational practice. Most important, collaborative action research is substantial professional inquiry and scholarship in its scope, its epistemology, and its outcome. A practitioner with this orientation and skill in action research is no longer static or dependent on others for professional progress. The practitioner's own professional growth and competence is enhanced. Not only are practitioners likely to feel professionally alive, they may also feel effective - in that they can do something about their profession. In meeting these goals collaborative action research reflects a generic process of inquiry and growth for improving schools and promoting staff development. This is the process which characterized the efforts of the ARCS teams as they evolved into temporary systems to conduct action research.

## TEMPORARY SYSTEMS AND THE ACTION RESEARCH PROCESS

Formed together out of a desire for personal, professional and/or classroom change, the ARCS teams evolved into <u>temporary systems</u> (Miles, 1964;

Goodman & Goodman, 1976; Morley & Silver, 1977; and Benne, Bradford, Gibb, & Lippitt, 1975). A temporary system consists of a group of individuals who engage in a joint task for a limited period of time (Miles, 1964). People come together, interact, create something, and then disband. Examples include conferences, workshops, institutes, retreats, study groups, and projects. "Such systems are brought into being to develop an idea, a plan, a product, a service, or to make something happen. When the task is completed, or the time set has expired the system is dissolved. Permanent systems, in contrast, exist to carry out relatively repetitive operations, or to provide services for which there is a continuing need" (Gant, South & Hansen, 1977:4).

Both of the ARCS research teams functioned as temporary systems in the permanent systems of their middle/junior high schools. Within temporary systems, individuals and groups may behave differently than in the permanent system because there is no necessary commitment to permanent organizational change. New structures and norms can be substituted for existing ones and can be tried out to determine their value. Power and status differentials may be minimized to facilitate new patterns of communication and to locate areas of needed change. For instance, where teachers can freely interact as peers, new patterns of problem solving and new approaches to decision making can be tried.

The ARCS research teams (temporary systems) operated very differently from the ways in which the schools (permanent systems) operated. Instead of relying on students for most of their human contact in the harried atmosphere of the classroom, teachers were able to sit in relatively uninterrupted settings to discuss professional matters; instead of making decisions about a

single classroom individually, they became involved in joint planning for the entire school; and instead of having few, if any, adult sources of feedback and encouragement about their teaching performances, they worked in a supportive environment in which commendations for action were frequent from peers, and outside experts.

Peer support, the sharing of ideas, the experience of collegiality and group decision making, were especially prized by the ARCS teachers. As temporary systems the action research teams involved individual development, providing teachers with opportunities to experience and practice different roles and functions; and group development, providing teachers with the opportunity to experiment with interdependent behavior and to use different methods of problem solving and decision making to achieve the objectives of their inquiry.

## CREATING NEW CONTEXTS

The action research teams created their own operational contexts which contrasted markedly with the operational context of their schools (see Table 4). They organized, operated, and developed new norms and structures in such a fashion as to highlight different assumptions as to what makes for effectiveness in running schools - their schools in particular. That is, by varying the principles used to organize and to operate themselves, the teams made more visible corresponding and contrasting principles in use in their schools. Consequently within the contours of the ARCS project the process of action research emerged as more significant than the product.

TABLE 4

TEACHER PERCEIVED SCHOOL AND ACTION RESEARCH CONTEXTS

| | School Context (Permanent System) | Action Research Team Context (Temporary System) |
|---|---|---|
| 1. | Change initiated and managed from the top | Change initiated and managed from the bottom, middle and top |
| 2. | Hierarchial principal managed | Non-hierarchial self-managed |
| 3. | Information generated for management - management information system | Information generated for everyone - problem solving information system |
| 4. | Norm of mutual tolerance | Norm of collegiality |
| 5. | Norm of convention | Norm of experimentation |
| 6. | Power concentrated at the principal's office | Power diffused in the team |
| 7. | Teachers handle limited specific roles and functions | Teachers handled different roles and functions, roles exchanged |
| 8. | Assignment of tasks to teachers | Teachers develop their own tasks |
| 9. | Teachers' roles defined and structured | Teachers' roles overlapping and flexible |
| 10. | Individual "private cycle" of problem solving in the classroom | Group "public cycle" collaborative problem solving outside the classroom |
| 11. | "Behaviorally" busy setting - reactive thinking - cognitive narrowness | A setting of pause - reflective thinking - cognitive expansion |
| 12. | Directed and reactive inquiry | Participatory and collaborative inquiry |
| 13. | Immediate, concrete, "in-classroom" perspective of classrooms and school | Detached "out of classroom" perspective of classrooms and school |
| 14. | Short term and quick "on demand" problem solving | Sustained deliberate inquiry |
| 15. | Recipe knowledge | General programmatic knowledge |

It was not the prospect, probabilities, or specifics of school change that stood out at the end of the project for the ARCS teachers - it was the process of collaboration which led to personal and professional growth. In the teachers' view, it is the process of collaborative action research that lasts - that has enduring value. This perspective of making change through the action research process is expressed clearly in the final reports of both ARCS teams which included recommendations that:

- Collaborative action research be applied in all future staff development and school change efforts.
- Collaborative action research be used to allow teaching staff to have significant influence in selecting the agenda for school and curriculum change.
- The collaborative action research process be used to develop and implement school instructional schedules.
- Teachers skilled in the collaborative action research process use their skills in promoting the process with other school staffs at other sites.

In summary both teams recommended that the context created through the collaborative action research process become the school's context for decision-making and initiating change.

The expectation that collaborative action research leads to professional development may, however, require further investigation. Although teachers themselves note that they have changed and foresee future projects or actions which build on newly acquired competencies, no

longitudinal studies exist which investigate the actual use of new skills or the permanence of change in self perception or behavior which result from an action research project. Although we can say that the teachers involved in this study experienced positive professional growth, further study is needed to document the longevity of that growth as well as the forms it takes over time.

## IMPLICATIONS OF THE FINDINGS

### Principals and other School Administrators:

The ARCS project does point out to principals and other school administrators what conditions they need to create in their schools in order to involve their staff in a process of continuously assessing school practices moving toward school improvement efforts. For review of these conditions, see Table 4. The collaborative action research projects of the ARCS teams produced a number of products that could be used to support changes in the school. For example, the teachers produced a history of change efforts in the school as well as how teachers felt about the changes. The history of change had never been documented or recorded before for staff and administration information. The teachers attempted to put down (or find) a statement of middle/junior high philosophy. This was either never done before or was not common-shared knowledge among staff. Although the teachers had been working in the same school for years, they did not have a common philosophy. The project had teachers thinking about basic issues - like what are our goals for middle/junior high school? This was never done before in a sustained, reflective, and involved manner..

Through the collaborative action research project, the teams shared a common body of knowledge about the school. A major outcome of the process was that the knowledge produced by the teachers' research enriched their understanding of the school environment and had the potential for improving the school.

Principals need to tap this potential. By creating the action research conditions for inquiry and school change, principals may find they will never have to do a needs assessment again. They could have a rich data base, and uncover many issues for school improvement. And finally they could develop a collective sense of ownership and leadership among teachers in defining and addressing school problems.

If the principal does not tap this potential and sees action research as merely a way of keeping teachers busy, then a rich and promising approach to local school improvement will be lost.

Whether a member of a collaborative action research team or not, the principal can foster effective inquiry and school improvement by striving to:

- Create new patterns of communication, collegiality and sharing.
- Develop an environment that supports inquiry and is professionally rewarding to teachers.
- Create a climate for teachers to interact with each other and to draw on each others knowledge and skills.
- Improve teaching and learning conditions by consulting with teachers about what needs to be done and working with teachers to bring about change.

In collaborative action research efforts, it is important for a principal to recognize that teams may choose to investigate "touchy" issues which require freedom of inquiry for the team and security on the part of the principal. Principals and other school administration can express strong support for action research teams while helping teachers understand administrative perspectives of the priorities and political agenda of the

school system and local community.

**Staff Developers, Teacher Educators, and Researchers**

One of the learnings from the ARCS project suggests that teacher education, research, and staff development need not be compartmentalized as separate discrete efforts. Long term systematic approaches to staff development offer university faculty and classroom teachers the time and place to exploit natural problem solving situations for collaborative action research. The ARCS project suggests that the way to do this is to begin with the problems confronting teachers in the classroom and in the school, and bring inservice teachers and university faculty together as teams of inquirers and problem solvers to do some "blood and guts" problem solving. Such a process could help break down fragmented approaches to teacher education, staff development, and research and produce useable knowledge to improve educational practice.

To facilitate school improvement and staff development efforts through collaborative action research, teacher educators, staff developers, and researchers need to:

- Recognize the adult development stages of individuals on the team.
- Respond flexibly to different stage perspectives.
- Ask probing and key questions to elicit alternative approaches to research problems.
- Model action research skills and recognize teachers' capabilities to assume these skills.

- Develop a working knowledge of the complexities of the unique context of each school.
- Recognize and support the capabilities of teachers to function as inquirers and ethnographers of their experiences in the classroom and the school.

A major implication of the ARCS study for staff development and educational change emanates from the finding that there is powerful relationship between the teacher's developmental stage and how the teacher participated in and performed on the tasks of collaborative action research. The finding suggests that the type and quality of collaborative action research is dependent upon the level of conceptual development of the teacher. This implies that there is a need to specifically set up educative programs designed to promote teacher conceptual development.

If the majority of teachers are probably at the modal conventional stages and as a result conform to external versus self evaluated standards, then it is understandable why so little research and development "takes" when applied to schools. In developmental terms we may have a mis-match between the expectations from new practice to be applied to schools and the lack of necessary self direction on the part of the teachers. Instead, the schools become vast wastelands strewn with fragments of failed innovative practice. Without self evaluated standards new practice is a fad, cast off without rationale since it was adopted in the first place without rationale. So all the fond hopes for democratic collaboration remain an impossible dream,

unless we attend to the central issue of the interaction between teachers developmental stages and the task of collaboration designed to improve, ultimately, the lives of those in the classrooms. The success of school improvement and research and development efforts may be greatly enhanced through staff development programs which are designed to educate teachers differentially i.e. to create learning environments for teachers according to their initial stage of development.

**Usable Knowledge and School Change**

All the products and usable knowledge resulting from the teachers' research needs to be contrasted with one principal's statement that the project kept teachers occupied. The focus of the teacher's research was on proposing changes and solutions to school problems. The recommendations the teachers were or were not able to make in their final reports and the changes they were able to comfortably propose, but not implement, require an analysis of a variety of individual and school contextual factors.

Members of the ARCS teams did not perceive themselves as successful in influencing the principal to adopt their recommendations for change. They expressed disappointment about their impact on the principal, perceiving the principal's support as lukewarm or neutral at best. In reflecting on the lack of support from their principals the ARCS teams indicated that the boundaries of their project (the temporary system) were not crossed by the principal and that there was insufficient contact by the team with the principal. In establishing its own system of norms, values, and operational procedures each team perceived itself functioning as an island of

collaboration in a sea of hierarchial decision making.

Some ARCS teachers speculated that the recommendations emanating from their action research projects were threatening to the principal. Such perceptions are not inconsistant with the nature of action research which assumes change as the raison d'etre of inquiry and focuses on significant concrete issues in the school environment which can be considered "touchy and messy."

In the final analysis the ARCS teachers perceived collaborative action research as a process which yielded benefits for themselves individually but with negligible impact on the school. To implement school wide change involving questions of scheduling, decision making, and school morale would require careful planning and implementation, patient follow through, organizational change skills, and the active support and involvement of the principal.

The involvement of the principal in any school wide change effort is critical - a fundamental change strategy which neither team chose to follow. We can only speculate why the teams chose not to involve the principal even admidst numerous suggestions to do so by the university researchers and certain team members. Teachers' perceptions of the principal seem to be a critical variable which provides us with information and insight about teachers and the project's capability to influence change in the school. Analysis of individual teacher's profiles suggests that teachers at different stages of development perceived the role of the principal differently. (See Table 5).

## TABLE 5

## ROLE OF PRINCPAL AS CHANGE AGENT

As Perceived By Teachers In the Same School At Different Developmental Stages

| ARCS Team Member | Comment | Developmental Analysis |
|---|---|---|
| Convential Teacher | It is a mistake for principals to ask teachers for their opinions and do the opposite it would be better in the first place just to tell teachers what to do. | This Conventional teacher, also a part-time administrator at the school, expresses a view that agrees with his earlier statement that the role of the principal is to autocratically "pull the trigger" and order unilateral change. |
| Transitional Teacher | The principal has little effect on change...teacher committees are in the front when it comes to setting policy. Information flows upward and downward to principal. | This transitional teacher's statement reflects his actions when he was an elementary school principal before joining the junior high teaching faculty. He tends to avoid conflict, give deference to those in authority, and feels that other groups set policies and initiate changes. |
| Goal Oriented Teacher | The principal runs the school and is at best a benevalent dictator. He can choose others to assist, but the final decisions are his. He can initiate or support changes or choose not to do so. | This goal-oriented teacher was confident of his own role in the school. He felt least controlled and least concerned with the principal in relation to his own ability to make changes needed in the school. Only in the teacher evaluation issue did he feel the principal might affect him. He implied that teachers need to figure out ways of staying |

Table 5 (continued)

ROLE OF PRINCIPAL AS CHANGE AGENT

| ARCS Team Member | Comment | Developmental Analysis |
|---|---|---|
| | | out of the principal's way, and as he followed his own advise, he was able to control his life in the school satisfactorily. He become the liaison of the team to the principal. |
| Goal-Oriented Teacher | The principal triggers the elements of change... staff, schedule, budget allocations, school climate interpersonal relations. These can be transmitted formally by the principal or informally by what the staff sees as decisions the the principal may influence. | A goal-oriented teacher, confident of her teaching and research skills, assertive, active in the school yet least confident of her role in school decision making. In transition to the self-defining stage, she is able to articulate the principal as one who triggers change, rather than controls change. |
| A Self-Defining Teacher | The principal's voice is one of many to be considered and his/her changes are only one set of ideas to be considered in initiating changes in a school. The principal is a resource rather than a deciding or controlling force. | Self-Defining teacher views the principal within larger context of the school system, as one who can and should facilitate and organize individuals around common goals. |

School wide change activities take time to prepare, initiate, and complete. It was not the purpose of the ARCS project to implement schoolwide change. Such a large and complex effort would have required another two years of organization and implementation. The purpose of the ARCS project was to provide teachers with the opportunity to collaborate with university researchers to carefully study the school and to propose changes to modify it. The recommendations made by the ARCS teams regarding more active and sustained teacher involvement in decision making, problem solving, and agenda setting is consistent with major recommendations of several of the recent national reports which suggest that teachers must be given more control of their professional lives in the school.

Collaborative action research will not automatically benefit the school in which it takes place. If left as a process used by a small group of teachers in the school, collaborative action research will probably have little impact on patterns of collegiality, communication, and experimentation in the school. If adopted by a school as a way of addressing school issues the process could produce positive staff interactions which would contribute to the solution of school based problems and improve educational practice.

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